

Understanding and managing cerebrovascular disease: Are we ready to bring the tragic disease to primetime?

Worldwide, stroke together with heart disease remains the number one cause of serious morbidity and mortality. This year at the American Heart Association annual Stroke Meeting it was announced that, in addition to the 750,000 new strokes that affect the US population, 11 million people, mostly elderly, every year also suffer 'silent strokes' (1). These lesions, visible only on CT scans or MRI, are in fact not actually silent and can produce progressive cognitive decline. As the population across the world ages, one can expect an increase in the incidence of symptomatic and silent stroke. In Canada, the Heart and Stroke Foundation estimates that the incidence of stroke will rise by 25% by 2025 (2).

This issue of the Journal has five reviews dedicated to Cerebrovascular Disease. The topic is very extensive and it is not possible to produce a comprehensive synopsis in the allocated space. We have however tried to restrict our reviews to issues that may have impact on the largest number of practicing physicians. We hope that the articles will contain sufficient information that will change your clinical practice and enhance the way cerebrovascular disease is managed in your community.

The first article by Saad et al reviews the current concepts surrounding the risk factors for cerebrovascular diseases. While there is considerable overlap with risk factors for ischemic heart disease, the reader will note that the frequency and incidence of a particular risk factor may be different for older individual who is at risk for stroke. It is also very disconcerting to note that hypertension (the single most important risk factor) despite its widespread prevalence in the elderly, remains under-recognized, under-medicated and poorly managed. Similar, the alarming trend in the increase in younger individuals who smoke can only be seen as a forerunner of trouble to come in the future. We can only hope that the readership will continue to aggressively control risk factors today and for the foreseeable future, as primary prevention remains the only effective method to manage cerebrovascular disease.

The second article by Qureshi focuses on recent advances on the etiology and diagnosis of stroke. Recognizing etiology and establishing the correct diagnosis are paramount in initiating the appropriate therapy. Basic science and imaging research clearly indicates that arterial occlusion in the cerebral circulation does not immediately results in irreversible injury. Restoration of blood flow within three hours may significantly reduce neuronal damage improve recovery. As shown below,

the use of tissue plasminogen activator (rt-PA) in patients presenting in less than three hours after a stroke can lead to a significantly better outcome. We hope that as we better understand cell death in the cerebral circulation, we will design medications that will prevent human cerebral ischemic injury and thus promote recovery.

Cardiac embolism accounts for approximately 25% of acute ischemic stroke. It is likely that a large proportion of cryptogenic stroke may also be secondary to cardiac disease. The third review by Yayha addresses some important issues in diagnosis and management of cardiac causes of ischemic stroke. The incidence of cardiac disease, particularly atrial fibrillation increases with age. As anticoagulation can significantly reduce the risk of recurrence, early diagnosis is important. It is also very important to remember that treatment of patients with atrial fibrillation with warfarin requires careful supervision and maintenance of INRs in the range of 2 to 3. This range of INRs, while offering best prevention strategy, would also result in minimizing complications.

The final review by Drs Khan et al addresses recent advances in the management of cerebrovascular disease. It is divided into two sections and begins with a management of acute stroke and follows with a discussion on stroke prevention. For most patients the use of ASA in a dose of 30-325 mg is sufficient for prophylaxis. A number of alternate therapies are available in patients who develop symptoms while on ASA or who are unable to tolerate ASA. Evidence for the use of thrombolysis in acute stroke is discussed in detail.

The forth article by Drs Dean et al highlights some common complications that can develop in patients who suffer an acute stroke. It is important to remember that most complications discussed in this review are preventable. Aspiration pneumonia is one of the most common causes for delayed discharge from the hospital. Prolonged periods of immobility promote venous thrombosis, infections and sores. Proper attention to prevention can significantly improve recovery after acute stroke and in our experience can be practiced in most hospitals. It does not require high-tech measures and the rewards of an effective program are immense.

These are very exciting times for researchers and physicians who manage acute stroke. Important discoveries in the laboratory and bedside are changing the way the disease is being managed. In the last decade we have been privileged to see that the nihilism surrounding managing stroke is slowly but surely dissipating and we are confident that, with continued discoveries in the future, we will be able to master this devastating disease that continues to take a terrible toll on the society.

REFERENCES:

1. Leary M, Saver, JL; Incidence of silent stroke in the US. 2001; 21; 363 (abst)
2. The changing face of heart and stroke in Canada 2000; Heart and Stroke Foundation of Canada, Ottawa (October 1999)

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